

# Creative Classrooms: The Journey of Art-Integrated Learning (2005–2023)

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## ABSTRACT

To make learning more effective and enjoyable, pedagogical interventions are necessary, particularly those who seek some challenges like academic stress, fear of failure which ultimately results to depression, anxiety, and more psychological issues among the learners. Among these, art-integrated learning emerges as a powerful tool to foster holistic education and emotional well-being. This paper aims to explore the integration of art with various disciplines and highlights the benefits of Art-Integrated Learning as an innovative pedagogical approach/ tool in classroom settings. While numerous studies on this subject have been conducted globally, relatively few conducted in India. The concept of art integration is well-established internationally, with early work by Ives and Pond (1980) demonstrating a relationship between the arts and cognitive development. For art integration to be effective, teachers must adhere to the PAOR (Plan, Act, Observe, Reflect) framework, ensuring structured implementation. However, integrating art into education presents unique challenges in the current digital age, where technology dominates yet falls short in imparting values. To instill values and enhance learning outcomes, educators must adopt diverse pedagogical strategies tailored to real-world contexts.

**Keywords:** Art-integrated learning; Teaching-learning process; 21st-Century learners; 21st-Century skills; Pedagogical tool; Academic excellence; Learner-centered approach; Cognitive benefits; Social and Emotional development.

## 1. Introduction

Learners often perceive subjects like mathematics and science as complex and difficult, making it crucial to find ways to make these subjects more accessible. Vasil (2020) conducted a study in which he integrated music with mathematics to address misconceptions and promote 21st-century skills, helping students engage with the subject in a more meaningful way. Art, in its various forms, allows learners to approach the world from new perspectives, fostering deeper connections to the material. Art-Integrated Learning (AIL) is grounded in constructivist learning theory, where learners actively construct knowledge through personal experiences. According to Björklund & Ahlskog-Björkman (2017), different approaches to teaching mathematics—such as process-oriented, product-oriented, and developmental-oriented—are enhanced when mathematics is connected with art, offering unique opportunities for learning. Art is not only a tool for academic growth but also a vehicle for social change and community connection (Jacobs, 2022). When a subject is combined with storytelling, then art becomes a powerful pedagogical tool, engaging students in diverse activities like role-playing, expression of emotions, and sensory exploration, all of which contribute to holistic learning (Hobson et al., 2019). Art-based education fosters a flexible and non-threatening learning environment, which encourages creative thought and problem-solving (Beagle, 2021). Art, in its various forms, serves as a crucial tool for understanding the world (Graham & Brouillette, 2017) such as, dance, as an art form, exemplifies the relationship between movement, objects, and space, while music enhances pattern recognition and strengthens conceptual connections (Catterall, 2009). Joshua's reflections on art-based learning, as discussed in Pauly (2019), suggest that this approach deepens students' understanding of academic content and is recognized as part of culturally sustaining pedagogies. The integration of art into science education allows for a re-conceptualization of the learning process, providing students with new ways to understand and engage with scientific concepts (Mark et al., 2021). Bradley et al. (2018) further proposes a theoretical framework

for the use of creative activities like visual art forms, including collages, which contribute to linguistic and cognitive development. These practices encourage learners to think beyond traditional boundaries, aligning with the guiding principles of the National Curriculum Framework (NCF, 2005). At the elementary level, exposure to observable phenomena and hands-on experiences is crucial for developing a deeper understanding (Jacobson & Wilensky, 2006).

According to Marshall (2010), integrating art strategies such as metaphor and depiction enhances connections between concepts, promoting systematic thinking and enriching the learning experience. Art plays a significant role in connecting human thoughts, bridging the mind and body, and fostering holistic development. But how and at which stage the art integration be effectively implemented? At the early childhood, presents an ideal phase for integrating art, where teachers can assume dynamic roles—such as artist, researcher, co-constructor, and designer—to address learners' needs within diverse cultural contexts (Hartle et al., 2015). Ives and Pond (1938) established the link between arts and academics, demonstrating that cognition improves through the practice of imagery, fantasy and media in educational settings.

Art has the potential to foster overall development in young learners, although it is more effective when introduced at an age where learners can begin to articulate their understanding of art-based learning (Nutbrown, 2013). Art integration serves as a transformative platform for teacher development, encouraging pupil teachers to plan, act, observe, and reflect beyond the confines of the curriculum (Shockley & Krakaur, 2020). Through art-based inquiry, educators gain a deeper appreciation for the creative use of art in teaching and learning, facilitating transformative learning experiences. Art forms such as music, dance, drama, and role-play create a dynamic and engaging learning environment for K-6 students (Kiser, 2023). These forms meet the diverse standards of school curricula while addressing the needs of 21st-century learners. According to the book “Learning through Movement in K-6 Classrooms”, integrating theater and dance with various subjects enhances cognitive functions like memory, attention, and mood. It also fosters an inclusive environment, promoting active participation in the classroom, which leads to deeper learning. This approach nurtures creativity, critical thinking, emotional stability, and cultural understanding while encouraging collaborative practices and imaginative thinking. In science education, particularly for class 6, this pedagogical method helps build knowledge, increase content retention, simplify complex concepts, and provide an authentic expression of individual learning. As noted by Rasmitadila (2023), art integration is one of the most valuable pedagogies for teaching science, supporting both intellectual and emotional development.

### **1.1. Research Questions**

(1) What are the cognitive benefits of using AIL? (2) How AIL is helpful in achieving academic excellence? (3) How AIL impacts on emotional and social development? (4) What is the relevance and applications of AIL across multidisciplinary fields?

## **2. Research Methodology**

A systematic literature review is carried out using an unbiased and thorough research approach to assess the existing research from 2005 to 2023, in the respective field of art-integration. This research summarizes the results of studies

on art-integrated learning as a pedagogical tool and come up with an emerging perspective. A critical analysis is being made on the basis of studies conducted in the teaching of science up to the higher education level.

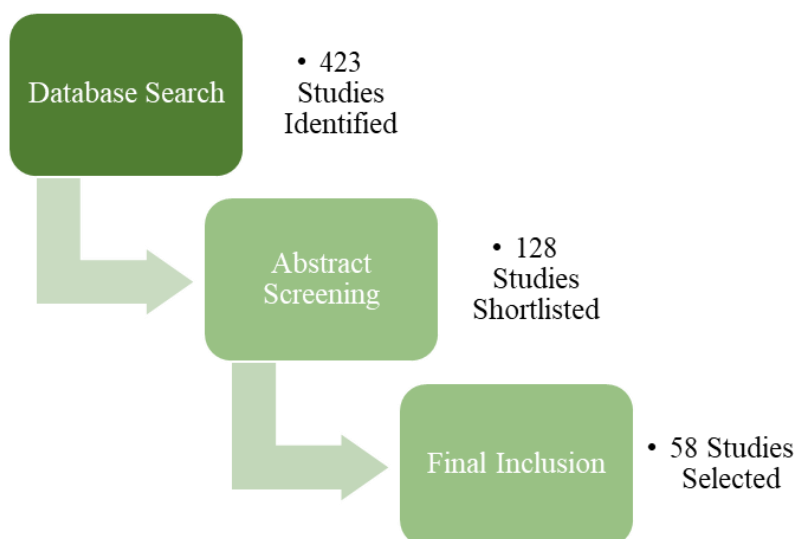
## 2.1. Sources of Data

In order to carry out a literature review based on the objectives of this review paper; 5 databases are selected to find out the probable answers to research questions. Table 1 shows the inclusion and exclusion criteria for the detailed review of paper. These repositories were used to answer the queries related to the art-integration upto higher education level from 2005 to 2023. Research papers were filtered manually and the most relevant studies were selected for this review paper in the respective field.

**Table 1.** Inclusion Exclusion Criteria for the Selection of Studies

Criteria Based on	Inclusion	Exclusion
Document Type	Refereed Journals, Peer-reviewed Journals, Conference Proceedings, Thesis	Research reports, Seminar Proceedings
Database	ERIC, Research Gate, WoS, Scopus, Taylor & Francis	Other Databases
Language	English	Other Language
Year	2005-2023	Before 2005

From the above (Table 1) sources of databases, 423 studies identified from 2003 to 2023. Among these studies, 295 studies were excluded after screening of the abstract. Only 128 studies were found to be appropriate according to the literature reviews, among which only 58 studies were selected for the final inclusion for this review paper as shown below in figure 1.



**Figure 1.** Number of Studies Included in the Review Paper

The selected studies are explored in four different parts such as the role of AIL in cognitive development, Benefit of AIL in achieving academic excellence, Impact of AIL on emotional and social development and relevance and applications of AIL across multidisciplinary fields.

### 3. AIL: Fostering Creativity and Skills

In the present era, 21st-century skills are essential for everyone to work in the workplace. These skills mainly consist of learning skills, literacy skills and life skills. Art-integrated learning is a transdisciplinary approach that increases the learner's interest and motivation to learn in science because the nature of science is also interdisciplinary (Vazquez-Manassero et al., 2021). Mason et al., 2008 examined the work of art-integrated pedagogy on the education of children with disabilities. In this, the results of interviews with teachers show positive aspects of art integration, which provides access to learning and opportunities for learners to express their interests and preferences. Duma, 2014 in his study mentioned the CETA program (Changing Education THROUGH Arts); this program positively impacts the development of learners and teachers becoming professionally developed and enhances the school's progress. By integrating education and arts, learners become stronger socially and academically, and there is an exponential increase in learners' cognitive and social skills. It provides a vast opportunity for the learners to become successful and provide ample ways to express their knowledge. The CETA program provides a learner-centric environment in or outside the classrooms. In Uganda, Ladaah et al., concluded that art integrated with vocational learning programs provides a better professional career and leads to a holistic orientation towards empowerment and entrepreneurship. An entrepreneur needs skills that should be taught from the initial stage of childhood. Brown et al., 2018 added that art can add values at the age of 3-5 years, which acts as a vehicle for the equality of education for all economically disadvantaged learners. Art integration brings social awareness, readiness to learn, and understanding of texture and material. Hunkins, 2019 explored the art integration in 7th and 8th-grade science students. In which they found that, art integration allows learners to express their learning visually in different ways, allow them to participate in classroom activities, and reduces phobias about participating in classroom activities. Now, the question is, why the participation in art activities is needed? It has many sound reasons, such as developing values and attitudes, meeting emotional needs, developing interest, and contributing to improving life. It provides fundamental ways for cognitive development ("The Arts and Cognitive Development," Ives & Pond, 1980). Zakaria et al., 2019 examine the effect of the art-based learning model on the teaching behavior of pre-service students and found better results in achieving effective teaching behavior than the practice-based learning model. But there are also some issues of integrating visual arts at the school level because, in this digitalized world, it is complex and critical to provide education through art (Ghalayants 2022).

### 4. Findings

#### 4.1. R. Q1: Cognitive Benefits of Art-Integrated Learning (AIL)

Several studies have highlighted the positive impact of art-integrated learning (AIL) on cognitive development. Singh & Pancholi (2020) found that AIL enhances learners' engagement and achievement, improves personal characteristics, and fosters a sense of community within the classroom. Art-based learning has also been shown to help develop deeper understanding, critical thinking, creativity, problem-solving skills, and a sense of ownership, which are essential for 21st-century learning skills (Das, 2023). According to Hardiman et al. (2014, 2017), art integration contributes to long-term retention of subject content, especially among low achievers, making it beneficial for cognitive development. Studies have also found that AIL can improve memory retention, academic

skills, and understanding in subjects like science and mathematics (Hardiman et al., 2014; Hardiman et al., 2017; Graham & Brouillette, 2017).

Art integration has been shown to foster greater curiosity, autonomy, and imagination, which are essential for cognitive growth. For instance, Ruiz-Mallén et al. (2021) observed that art-based methods foster responsibility in students, helping them acquire both skills and values needed to become responsible citizens. Furthermore, AIL's role in improving critical thinking, creativity, and problem-solving is emphasized in several studies (Singh, 2020; Das, 2023). Additionally, art activities like storytelling, dance, and music have been found to stimulate intellectual engagement and long-term cognitive development (Hobson et al., 2019; Jacobs, 2022).

#### **4.2. R. Q2: Benefits of AIL in Achieving Academic Excellence**

The academic benefits of AIL are significant in enhancing student achievement across various subjects. For instance, studies by Hardiman et al. (2014, 2017) and Graham & Brouillette (2017) show that AIL improves students' understanding of physical science, leading to better academic outcomes. Art integration not only strengthens knowledge retention but also boosts academic success in mathematics and language proficiency, as observed in studies by Walton (2020) and Sari et al. (2023). Furthermore, AIL has been found to foster social and academic growth in students, improving their ability to express ideas, collaborate, and engage in critical thinking (Jacobs, 2022; Pauly et al., 2019). In mathematics, the integration of art with STEM (Science, Technology, Engineering, and Mathematics) has shown significant improvement in understanding and academic performance (Graham & Brouillette, 2017; Rini et al., 2023). The inclusion of creative activities in STEM subjects enhances student engagement and helps learners grasp complex concepts with greater ease. In vocational education, art integration has been shown to enhance both academic and professional skills, as it fosters creativity, critical thinking, and problem-solving abilities that are valuable in the workplace (Meltzer & Schwencke, 2020; Mena-Avilés et al., 2023).

The academic advantages of AIL are further supported by research indicating that it helps in bridging the gap for learners with special needs, such as gifted students (Eiserman et al., 2015), students with learning disabilities (Sari et al., 2023), and even learners in underprivileged communities (Brown et al., 2018). By integrating art into the curriculum, learners are provided with diverse ways to interact with the content, enhancing their overall academic performance and preparing them for future success.

#### **4.3. R. Q3: Impact of AIL on Emotional and Social Development**

AIL positively impacts learners' emotional well-being and social competencies. Artistic disciplines like music, dance, theatre, visuals arts, literacy arts and media arts impose a positive effect on learners' socio-emotional learning (Mazinder, 2020). Sethy (2020) observed that AIL nurtures cooperation, confidence, and aesthetic sensibility, fostering strong peer and teacher relationships. This aligns with Gardner's assertion that "artistic involvement is a mind-building experience." Dhanapal (2014) noted that the inclusion of arts in science teaching cultivates social and emotional growth alongside academic benefits.

Art-based activities such as drama, dance, and visual arts build patience, communication skills, and self-confidence (Jacobs, 2022). Visual arts sessions for female survivors helped rebuild self-esteem and identity (Dickson, 2021).

Additionally, incorporating performing arts like storytelling and drama into pedagogy creates inclusive learning environments and promotes social equity (Hobson et al., 2019; Walton, 2020). The integration of arts into medical education, as explored by Quisenbert et al. (2023), develops essential soft skills like empathy and communication, reflecting the socio-emotional benefits of art-based pedagogy.

#### **4.4. R. Q4: Relevance and Applications of AIL Across Multidisciplinary Fields**

AIL seamlessly bridges multiple disciplines, fostering holistic learning experiences. For example, STEAM approaches integrate arts into STEM to address real-world challenges and inspire creativity (Mohd Hawari & Mohd Noor, 2020). This multidisciplinary approach enables learners to connect diverse subjects meaningfully, as demonstrated in environmental education and literacy through essays and art projects (Gray et al., 2016). Arts also enhance vocational and professional skills, as shown by Meltzer and Schwencke (2020), who highlighted the role of art-based methods in fostering collaboration and reflection for workplace readiness. AIL has proven particularly effective in addressing the needs of underserved and minority groups, improving language proficiency and cultural understanding (Zhang & Jia, 2022; Lorimer, 2016). Additionally, the integration of arts into social studies has facilitated critical discussions and insights into socio-cultural topics (Zackery, n.d.).

Multidisciplinary applications of AIL extend to fostering higher-order thinking skills, political ideology, and 21st-century skills for early learners (Rini et al., 2023; Liu & Zhang, 2023). These findings suggest that art-integrated pedagogy not only enhances subject-specific understanding but also equips learners with versatile skills for diverse real-life applications. Now we are living in digital era, Perry and Edwards, 2019 use art-based learning approaches for mobile learning. They used poetweet, photo pairing, reflective mosaic, and six-word stories as art-based approaches. It encourages interaction among the learners, social growth, and facilitate community. Art-based strategies produce positive outcomes with m-learning but it is a challenging task for teachers and teacher educators.

Several studies conducted in India have concluded that teachers are aware of art-integrated pedagogy and have a positive perception of both teachers and learners toward this approach. However, they continue to rely on traditional teaching methods. It is essential for teachers to adopt this pedagogical tool to make learning more flexible and enjoyable for students. While art integration is not a new concept in India, it has a long-standing history in Abroad, where it is increasingly emphasized to enhance the effectiveness of teaching and learning using AIL as a pedagogical tool.

#### **5. Discussion**

From the existing literature, most research was conducted in 2023 in the field of art integration, whether visual or performing arts, majorly in Abroad. In India, there are fewer research studies conducted in this area, although art-integrated learning is recognized as a pedagogy that helps in enhancing various skills needed in the 21st century. Art plays a diverse role in educational settings (Ahmed & Sharma, 2020). In 21st century, art integration is necessary as it enables learners to freely express their ideas and emotions, provides learning opportunities (Zackery, K. W. n.d.; Bradley et al., 2018), contributes to personality development (Eiserman et al., 2015), reduces academic stress (Mohalik & Basu, 2020), and enhances crucial 21st-century skills (Quisenbert et al., 2023). Art-integration



is a pedagogy that can be applied across various disciplines at both school and university levels. Subject-specific aesthetic responses have been shown to promote learning in specific subjects (Hannigan et al., 2022).

Art integration has also proven beneficial for children with special needs, making them more socially and emotionally stable. For instance, New York City's "Everyday Arts for Special Education" program was initiated for the betterment of specially-abled learners (Casciano et al., 2019). Art-integrated learning fosters active learning, helps learners absorb concepts more effectively, and boosts self-esteem (Orak & Demirci, 2018). Despite its low costs, this approach offers significant benefits (Hayes & Clark, 2017). Integrating arts into different disciplines enriches the curriculum and brings a sense of beauty to individuals (Ghalayants, 2022). The implementation of art-integrated pedagogy emphasizes individualized learning, the development of creativity, and emotional stability in learners. Teachers play a pivotal role in this pedagogical approach. They must design activities based on the learners' mental and chronological age and societal needs to achieve educational goals, including a responsible citizen. Group activities should also be emphasized to teach learners collaborative skills for future workplace scenarios. Additionally, the integration of arts into STEM subjects (STEAM) helps bridge the gap in areas like science, technology, engineering, and mathematics, which many learners find challenging. Creativity—an essential 21st-century skill—becomes the link between innovation and organizational productivity through STEAM (Liao, 2016; Trilling & Fedal, 2009). This approach aligns with John Dewey's philosophy of "Learning by Doing," promoting experiential learning (Williams, 2017).

## 6. Conclusion

Learning modifies behaviour and art enhances the ability of expressing one's thought and perspective. Learning is shaped by the experiences people have in the world and these experiences are primarily absorbed through the body and mind (Merleau-Ponty, 2002). Majorly, individual perceives the world with their mind and senses (Alerby, 2009), which derives aesthetic delight and inculcate the ability to communicate with others. Therefore, art must be utilized by giving it a central role in school curriculum from primary stage to secondary stage (NEP 2020). Artistic activities promote and help in improving self-management and self-discipline among the learners (Mazinder, 2020). The ultimate aim of education is "holistic development" which is not limited to specific subject (English, Hindi, Mathematics, Science, and Social Sciences) although learners need to understand their abilities of mind and senses to become a creative learner. Artistic activities/processes, art curriculum and art-integrated pedagogy can be a successful tool to develop the abilities like creative thinking, empathy, participation, decision-making, effective communication, coping with academic stress, and interpersonal relationship skills (Battista, 2023). According to NEP (2020), Art-integrated pedagogy is a vital approach for enhancing 21st-century skills, fostering creativity, and promoting active and experiential learning. It not only addresses the academic and emotional needs of diverse learners but also prepares them for future challenges by nurturing collaborative and innovative mindsets. When learners are experiencing some sort of emotional conflict then art seems to be a well-suited intervention for them (Adu-Agyem et al., 2009). Teachers play a crucial role in the effective implementation of this pedagogy, ensuring it meets the unique needs of learners and society. The proper implementation of art-integrated pedagogy needs: awareness towards art-integrated learning, proper teacher-student ratio, utility of art-activities as per the appropriate age of the learners, thoughtful implementation of art discipline with other disciplines and proper training of teachers

to effectively implement the innovative pedagogies. The integration of arts with other disciplines, including STEM, offers transformative potential for education, contributing to the holistic development of individuals while achieving broader educational goals. Embracing emerging technologies like virtual reality, AI-generated art, and digital media can enhance its reach and effectiveness. AIL should focus on integrating local cultural heritage, folk arts, and traditional crafts to promote cultural preservation while enriching classroom experiences, as art is strong medium of expressing, connecting and transforming for diverse cultures like India. Professional development programs for educators, coupled with research-driven evidence, can ensure its seamless implementation. Furthermore, AIL can serve as a tool for fostering life skills, social-emotional learning, and inclusivity, making education more engaging and accessible for diverse learners. Integrating AIL into curriculum frameworks and developing creative assessment strategies can ensure its effectiveness in nurturing 21st-century skills, making education engaging, meaningful, and transformative.

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#### **Competing Interests Statement**

The authors declare no competing financial, professional, or personal interests.

#### **Consent for publication**

The authors declare that they consented to the publication of this study.

#### **Authors' contributions**

Both the authors made an equal contribution in the Conception and design of the work, Data collection, Drafting the article, and Critical revision of the article. Both the authors have read and approved the final copy of the manuscript.

#### **Availability of data and material**

Not applicable for this study.

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